

Virginia Department of Environmental Quality
Draft 2020 Water Quality Integrated Report
Public Comment – Response Document

Comments received
June 8, 2020 to July 9, 2020

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Comments from EPA Region III



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Ms. Sandra Mueller
Office of Water Monitoring and Assessment
Virginia Department of Environmental Quality
P.O. Box 1105
Richmond, Virginia 23218-1105

Dear Ms. Mueller:

Thank you for the opportunity to review the Virginia Department of Environmental Quality's (VADEQ) *Draft 2020 305(b)/303(d) Water Quality Assessment Integrated Report* (IR), which was released for public review and comment from June 8, 2020 through July 9, 2020. Based upon the U.S. Environmental Protection Agency's (EPA's) review of the draft IR, we are offering the following comments related to specific impaired waterbody segments and category descriptions.

Comments on Delistings:

Assessment Unit(s)	Water Name	2018 Cause Group Code	Parameter	Associated Use	EPA Comment
VAP-A31E_GLD01A00	Goldman Creek	A31E-02-SF	Fecal Coliform	Shellfishing	A delisting rationale was not provided in the spreadsheet. Please provide.
VAP-H39R_XBH01A14	XBH - Reedy Creek, UT	H39R-02-DO	Dissolved Oxygen	Aquatic Life	The 2018 CGC listed in delisting table was H39R-02-DO. The CGC noted in the Parameter Delist Comments was H39R-29-DO (CFL 2016). Please explain.
VAS-M02R_LOV01A02	Lovills Creek	M02R-01-DDE	DDE in Fish Tissue	Fish Consumption	Please provide additional justification for assessment change if previous red horse sucker data indicated a TV exceedance.
VAS-M02R_LOV01A02	Lovills Creek	M02R-01-DDT	DDT in Fish Tissue	Fish Consumption	Please provide additional justification for assessment change if previous red horse sucker data indicated a TV exceedance.

In addition to the comments provided in the above table, we also have comments based upon our review of the Mountain Creek (VAP-J04R_MTC01A10, J04R-02-BEN) 4C Rationale. While, EPA acknowledges that upstream impoundments can have deleterious impacts to downstream aquatic life, please confirm that all potential point and non-point pollutant sources associated with low dissolved

oxygen (e.g., excess nutrients) and sedimentation were evaluated and eliminated as potential stressors prior to the lower segment of J04R-02-BEN being moved to Category 4C.

EPA appreciates the continued efforts put forth from VADEQ staff in evaluating water quality conditions of the Commonwealth and looks forward to VADEQ's final 2020 IR submission via ATTAINS. If you have any questions, please feel free to contact Bill Richardson at richardson.william@epa.gov or (215) 814-5675.

Sincerely,

Gregory Voigt, Chief
Standards and TMDLs Section

DEQ Response to EPA Region III

Assessment Unit (s)	Water Name	2018 Cause Group Code	Parameter	Associated Use	EPA Comment	DEQ Comment Response
VAP-A31E_GLD01A00	Goldman Creek	A31E-02-SF	Fecal Coliform	Shellfishing	A delisting rationale was not provided in the spreadsheet. Please provide.	<p>ATTAINS Delist Rationale: WQS no longer applicable.</p> <p>Parameter Delist Comment: PARTIAL DELIST 2020 - Fecal Coliform - A31E-02-SF (CFL 2014) Shellfishing Use Not Applicable - Admin. Condemned - DSS Cond 001-008B, 5/30/2018</p> <p>Goldman Creek was initially impaired for the Shellfish Consumption Use during the 2014 cycle due to VDH-DSS Shellfish Condemnation 001-088B, 9/13/2012. In the 2016 cycle, the Rosier Creek impairment expanded and the impairments were merged. They split again in the 2018 cycle.</p> <p>The impairment was nested in the Rosier Creek Shellfish TMDL. The TMDL was approved by the EPA on 6/8/2006 and by the SWCB on 4/28/2009. The condemnation was not included in the TMDL; however, the area is within the tidal range of the addressed impairment.</p> <p>In the 2020 cycle, the impairment was converted to administratively condemned. The use is therefore considered removed and the creek will be delisted.</p>

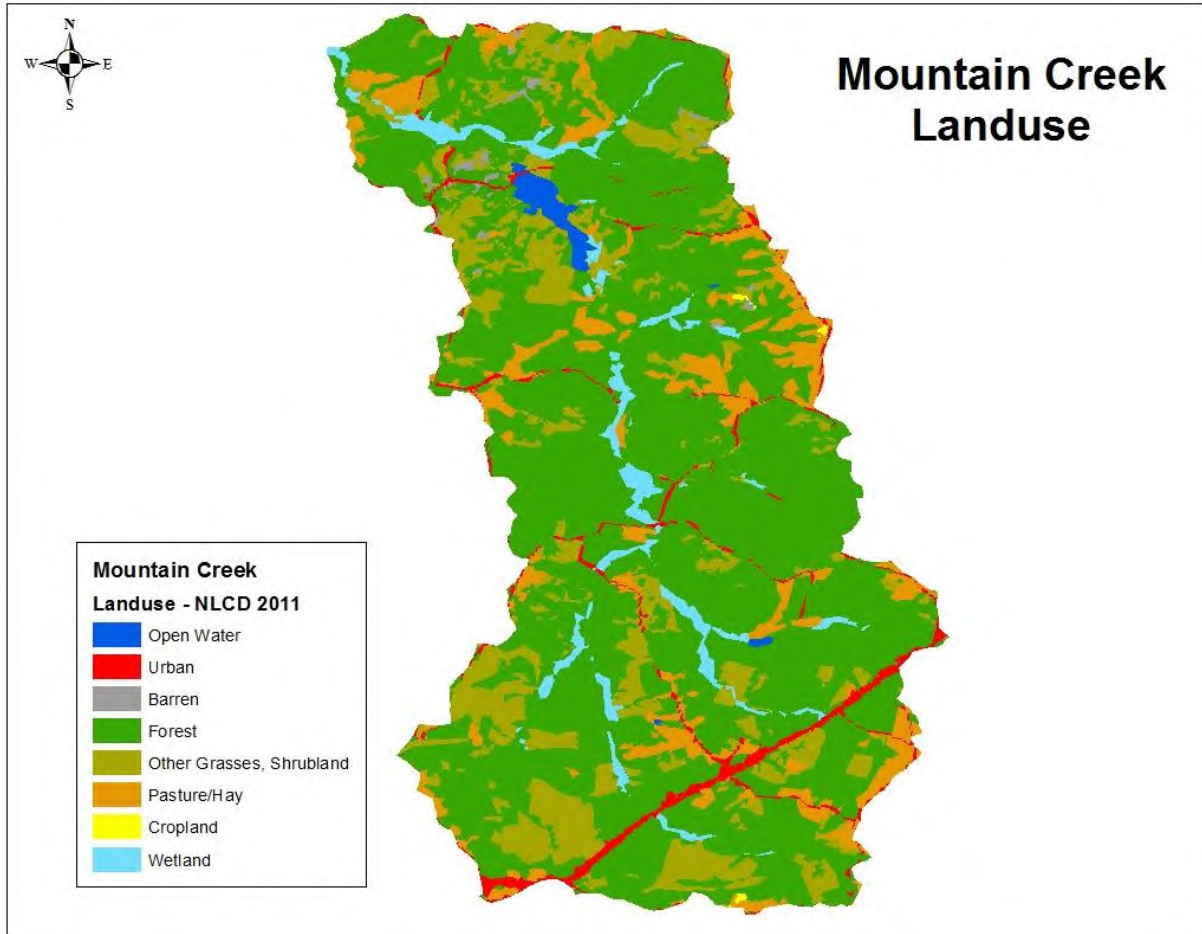
Assessment Unit (s)	Water Name	2018 Cause Group Code	Parameter	Associated Use	EPA Comment	DEQ Comment Response
VAP-H39R_XBH01A14	XBH – Reedy Creek, UT	H39R-02-DO	Dissolved Oxygen	Aquatic Life	The 2018 CGC listed in delisting table was H39R-02-DO. The CGC noted in the Parameter Delist Comments was H39R-29-DO (CFL 2016). Please explain.	The 2020 IR Delist spreadsheet contained a typo for this Assessment Unit. The 2018 CGC and any references in the delist comments should be H39R-29-DO. A revised 2020 IR Delist spreadsheet will be provided.
VAS-M02R_LOV01A02	Lovills Creek	M02R-01-DDE	DDE in Fish Tissue	Fish Consumption	Please provide additional justification for assessment change if previous red horse sucker data indicated a TV exceedance.	During the 2020 IR cycle, a review of the listing data only produced a single exceedance of the DDE Tissue Value during a 2007 sampling event. Per DEQ Water Quality Assessment Guidance two or more exceedances of tissue value are required for a listing decision. The assessment unit has been re-categorized as 2B – Fully Supporting with an Observed Effect.
VAS-M02R_LOV01A02	Lovills Creek	M02R-01-DDT	DDT in Fish Tissue	Fish Consumption	Please provide additional justification for assessment change if previous red horse sucker data indicated a TV exceedance.	During the 2020 IR cycle, a review of the listing data only produced a single exceedance of the DDT Tissue Value during a 2007 sampling event. Per DEQ Water Quality Assessment Guidance two or more exceedances of tissue value are required for a listing decision. The assessment unit has been re-categorized as 2B – Fully Supporting with an Observed Effect.

EPA Comment:

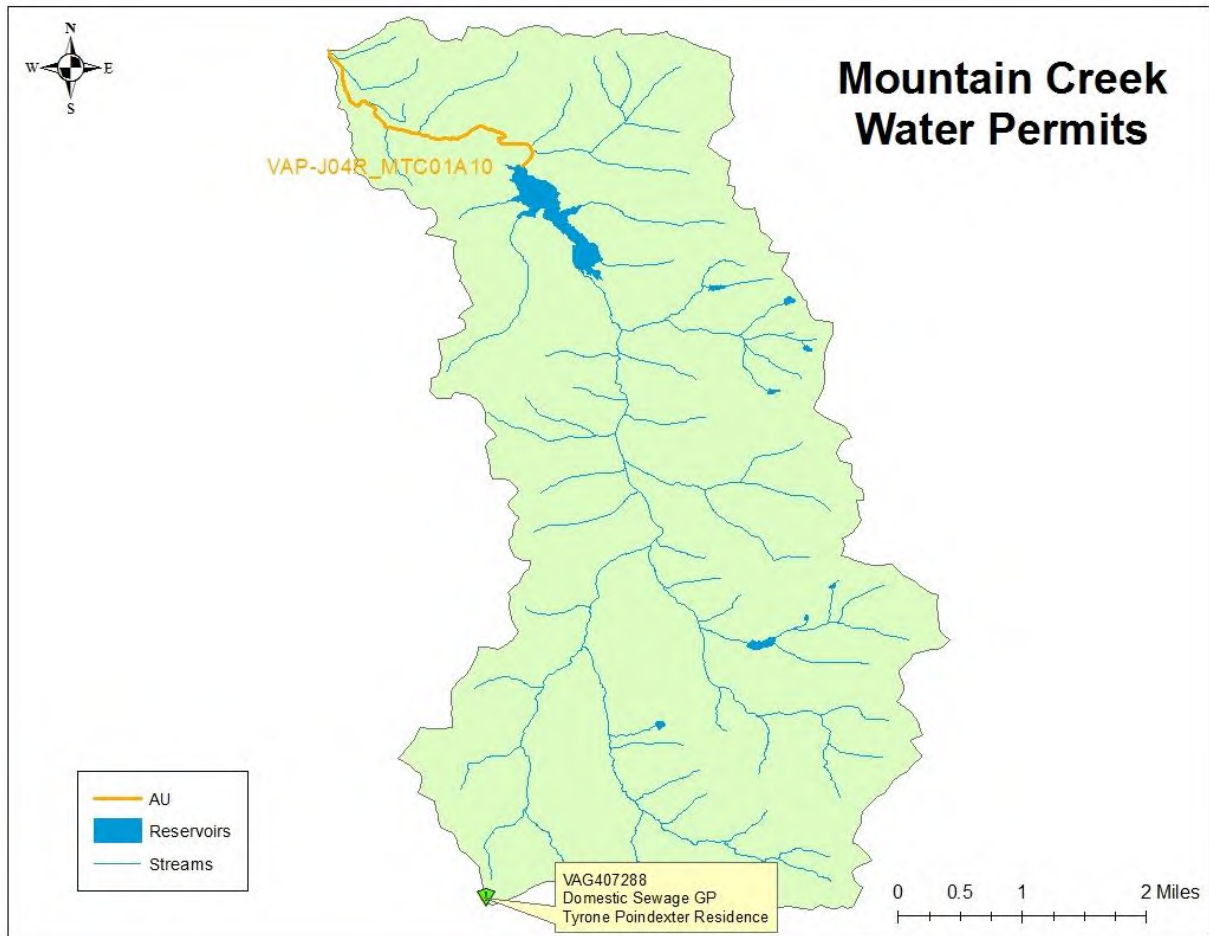
...review of the Mountain Creek (VAP-J04R_MTC01A10, J04R-02-BEN) 4C Rationale. While, EPA acknowledges that upstream impoundments can have deleterious impacts to downstream aquatic life, please confirm that all potential point and non-point pollutant sources associated with low dissolved oxygen (e.g., excess nutrients) and sedimentation were evaluated and eliminated as potential stressors prior to the lower segment of J04R-02-BEN being moved to Category 4C.

DEQ Response:

The DEQ Piedmont Regional Office has evaluated all potential point and non-point pollutant sources in the Mountain Creek watershed through the attached land use analysis and point source inventory. The upstream impoundment remains the biggest stressor to the lower segment of J04R-02-BEN and VAP-J04R_MTC01A10 should be Category 4C in the 2020 IR.



	Square Meters	Acres	Square Miles	Percentage
Open Water	367379	73.4758	0.141845032	0.80%
Urban	1486641	297.3282	0.57399209	3.30%
Barren	221807	44.3614	0.085639683	0.50%
Forest	30150390	6030.078	11.64106558	66.80%
Other Grasses, Shrubland	7376658	1475.3316	2.848127654	16.30%
Agriculture - Pasture	3857294	771.4588	1.489301213	8.50%
Agriculture - Cropland	44127	8.8254	0.017037435	0.10%
Wetlands	1614642	322.9284	0.623413276	3.60%
Unclassified	0	0	0	0.00%
Total	45,118,938	9,024	17.4	100%



Comments from Virginia Association of Municipal Wastewater Agencies (VAMWA)



VIRGINIA ASSOCIATION OF MUNICIPAL WASTEWATER AGENCIES, INC.

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Blacksburg-VPI Sanitation Authority
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County of Spotsylvania
County of Stafford
Upper Occoquan Service Authority
City of Waynesboro
Western Virginia Water Authority
City of Winchester

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Town of Bowling Green
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County of Campbell
County of Caroline
Town of Colonial Beach
County of Culpeper
D.C. Water
Dinwiddie County Water Authority
Fauquier County Water & Sanitation Auth.
City of Fredericksburg
County of Goochland
Halifax County Service Authority
Henry County Public Service Authority
Town of Kilmarnock
Louisa County Water Authority
Maury Service Authority
Montgomery County Public Service Auth.
County of New Kent
Town of Onancock
County of Powhatan
Town of Purcellville
Rapidan Service Authority
Stoney Creek Sanitary District
Town of Strasburg
Sussex Service Authority
Town of Tappahannock
Town of Warsaw
Wise County Public Service Authority
Town of Woodstock

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RK&K
Stantec
The Thrasher Group, Inc.
Timmons Group
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LEGAL COUNSEL

AquaLaw PLC

July 9, 2020

By U.S. Mail & Email (Sandra.Mueller@deq.virginia.gov)

Ms. Jutta Schneider
Water Planning Division Director

Ms. Sandra E. Mueller
Office of Water Monitoring and Assessment

Ms. Amanda Shaver
Office of Water Monitoring and Assessment

Virginia Department of Environmental Quality
1111 East Main Street
Suite 1400
Richmond, Virginia 23219

Re: 2020 Water Quality Assessment Integrated Report (Draft)

Dear Ms. Schneider, Ms. Mueller, Ms. Gray:

Please accept this comment in support of the Department's draft 2020 Integrated Report. This is submitted on behalf of the Virginia Association of Municipal Wastewater Agencies and its Water Quality Committee. As you know, VAMWA represents approximately 65 clean water utilities, whose purpose is to work together to promote water quality based on scientific principles and sound policy.

We support the approach and procedures of the draft IR. This is of course not by way of withdrawing previous comments on Shenandoah Algae protocols, proposals on lakes assessment, and other recent matters.

As always, we appreciate the efforts of the Department and its personnel on these issues.

Sincerely,

Jamie S. Heisig-Mitchell
Chair, Water Quality Committee

Copy: VAMWA Board
VAMWA Water Quality Committee
Christopher D. Pomeroy, Esq.

DEQ Response to VAWMA

Thank you for your review of Virginia's Draft 2020 Integrated Report.

Comments from Hampton Roads Sanitation District (HRSD)



July 9, 2020

Sandra Mueller
Virginia Department of Environmental Quality
Office of Water Monitoring and Assessment
P.O. Box 1105
Richmond, VA 23218-1105
Sandra.Mueller@DEQ.Virginia.gov

RE: Comments on Draft 2020 305(b)/303(d) Water Quality Assessment Integrated Report

Dear Ms. Mueller,

Hampton Roads Sanitation District (HRSD) appreciates the opportunity to comment on the above referenced document. The continued efforts of VA DEQ in monitoring and assessing state waters to more accurately characterize their improving quality is extremely encouraging. In general, the trend monitoring depicts a positive outlook and is a testament to the successes of Clean Water Act implementation at the state level. The report and its content improve with each assessment year despite the challenging economic environment. As DEQ continues to improve the assessment process, HRSD would like to offer comment on issues with VPDES regulatory implications.

James River / Elizabeth River PCB Water Column Study

The James and Elizabeth Rivers both have VDH fish consumption advisories, primarily for PCB's. This advisory extends from I-95 James River Bridge in Richmond to the Hampton Roads Bridge Tunnel. DEQ has been preparing a PCB TMDL for the Lower James River for over 10 years now. In 2013, in preparation for this TMDL, VA DEQ collected water samples along portions of the James River. VA DEQ also requested data from wastewater dischargers into the lower James. This data is now almost 10 years old. Given the substantial wastewater treatment plant improvements made by wastewater utilities since this initial sampling period it is very likely that this data is now out-dated and inaccurate. VA DEQ should collect newer data using improved analytical instrumentation before attempting to develop a James River PCB TMDL.

Integrated Report Document

HRSD requests that given the size and complex nature of this type of report that an additional 30 days be given to review and make comments. This is especially true given the current working scenarios caused by COVID-19. Additionally, it would be extremely helpful if there was a mechanism in the report for identifying specific impairments in a geographic location and

being able to link directly to the specific fact sheets. This may be a function that is already available but it is not readily obvious to external readers of this report.

Thank you for the opportunity to review and comment on this report.

Respectfully,



Chris Burbage, PhD

Environmental Scientist

HRSD

1434 Air Rail Avenue

Virginia Beach, VA 23455

757-355-5013

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DEQ Response to HRSD

Thank you for your review of Virginia's Draft 2020 Integrated Report. We are currently working on ways to improve the search for impaired waters and associated fact sheets based on geographic location. In the interim, please visit our interactive mapping tool at the following link:

https://apps.deq.virginia.gov/mapper_ext/default.aspx?service=public/Draft_2020_ADB_All_Uses. Once a specific Assessment Unit of interest has been identified that ID can be searched in the Impaired Waters Fact Sheet file here:

https://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/IntegratedReport/2020/ir20_Appendix5_Category4or5_FactSheets_Detailed.pdf.

Please contact Amanda Shaver (amanda.shaver@deq.virginia.gov) or Cleo Baker (cleo.baker@deq.virginia.gov) for any additional specific data needs.

Comments from Earthjustice and Potomac Riverkeeper Network



July 9, 2020

Submitted via email to Sandra.Mueller@deq.virginia.gov

Sandra Mueller
Virginia Department of Environmental Quality
Office of Water Monitoring and Assessment
P.O. Box 1105
Richmond, VA 23218-1105

Re: Draft 2020 Virginia 305(b)/303(d) Water Quality Assessment Integrated Report

Dear Ms. Mueller,

Earthjustice and Potomac Riverkeeper Network again urge the Department of Environmental Quality ("DEQ") to fulfill its duty to identify the North Fork, South Fork, and main stem of the Shenandoah River (collectively, "Shenandoah River") as impaired due to widespread algae blooms fueled by uncontrolled or poorly-controlled pollutants including nitrogen, phosphorus, and sediment, as required by section 303(d) of the Clean Water Act, 33 U.S.C. § 1313(d). In order to make this impairment finding, DEQ must evaluate all existing and readily available water quality-related data and information concerning algae in the Shenandoah River, as required by EPA regulations. 40 C.F.R. § 130.7(b)(5), (b)(6). In a *per curiam* decision, the U.S. Court of Appeals for the D.C. Circuit recently recognized DEQ's obligation to consider citizen data demonstrating recreational impairment, regardless of whether it was collected according to a formalized methodology. *See Potomac Riverkeeper et al. v. Wheeler*, No. 1:17-cv-01023 at 3 (D.C. Cir. Apr. 28, 2020) (*per curiam*). Unfortunately, the Draft 2020 Integrated Report makes clear that DEQ has again declined to assess and list the Shenandoah River using the extensive citizen-submitted information already available to DEQ. This information demonstrates that the consistent presence of excessive algae in different locations throughout the river interferes with the growth and survival of healthy aquatic life, and interferes with or diminishes recreational uses including swimming, wading, floating, canoeing, aesthetic enjoyment, and fishing. The information further demonstrates beyond any reasonable doubt that existing effluent limits are not stringent enough to fully implement Virginia's narrative water quality standards or designated uses relating to algae in the Shenandoah River. In light of this data and information, DEQ has a duty to identify the Shenandoah River on the state's impaired waters list as required by the Clean Water Act, 33 U.S.C. § 1313(d)(1)(A).

Most of the data and information already available to DEQ through our previous submissions falls within the proposed assessment period for the Draft 2020 Integrated Report,

i.e. data collected from January 1, 2013 through December 31, 2018.¹ We therefore resubmit the Technical Review we submitted with our comments on the 2014 Draft Integrated Report, and resubmitted in 2016 and 2018 (Attachment B). This review, along with the other submissions of river user complaints, photographs, and citizen-collected data attached to Riverkeeper's comment letters from the 2010, 2012, 2016, and 2018 Integrated Reports, demonstrate that over the past ten years algal blooms have become prevalent across all three reaches of the Shenandoah River (North Fork, South Fork, and main stem).

Finally, the longstanding excessive algae problem on the Shenandoah River continues to interfere with recreational use of the river today. We have attached approximately fifty formal algae complaints we previously submitted to DEQ in the summer and fall of 2019 (Attachments A1 – A8).² Each of these complaints contains detailed descriptions of the excessive algae, including the nature and extent of the algae, location, and photographs with date, time, and GPS coordinate information. The pictures depict varying forms of algae in shades of green, grey, brown, and purple, often in floating clumps and mats or filling the underwater column. While this number of formal complaints in 2019 is large, it was limited by staffing resources and could have easily been much larger. Clearly, excessive algae on the Shenandoah River is not going away. If anything, the algae will likely be exacerbated by rising temperatures in the state. For example, seven of the top ten warmest years on record in Richmond, Virginia have occurred in the last 14 years, and the past three years are all on the top ten list for the warmest years.³

I. Virginia's Mandatory Duty To Assess The Evidence Presented And Identify The Shenandoah River As Impaired

The Clean Water Act requires that “[e]ach State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of [the Act] are not stringent enough to implement any water quality standard applicable to such waters.” 33 U.S.C. § 1313(d)(1)(A). Designated uses are water quality standards by definition. *Id.* § 1313(c)(2)(A). Accordingly, when evidence demonstrates that water quality standards or designated uses are not being attained despite the application of technology-based effluent limitations, the state “shall identify those waters” in its integrated report.

EPA regulations that govern each state's listing process further require that “[e]ach State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the [impaired waters] list...” including, “[a]t a minimum... all of the existing and readily available data and information about the following categories of ... (iii) [w]aters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions.” 40 C.F.R. § 130.7(b)(5).

¹ DEQ, Draft 2020 Integrated Report at ES.

² While this evidence falls outside the regular assessment period for the 2020 Integrated Report (2013 – 2018), we urge DEQ to consider this information now, as the algae crisis on the Shenandoah requires urgent action to prevent future years of harm to the river and the public's recreational use of the river.

³ National Weather Service, Top 10 List Richmand, VA Average Temperatures, *available at* https://www.weather.gov/media/akq/climateRECORDS/RIC_AVE_T.pdf.

A. Relevant Virginia water quality standards

The water quality standards that are applicable to the Shenandoah River and relevant to excess algal growth include the following:

All state waters, including wetlands, are designated for the following uses: recreational uses, e.g., swimming and boating; the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them; wildlife; and the production of edible and marketable natural resources, e.g., fish and shellfish.

9 VA. ADMIN. CODE § 25-260-10.A. (emphasis added).

State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life.

Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances (including those which bioaccumulate); *substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits; and substances which nourish undesirable or nuisance aquatic plant life.* Effluents which tend to raise the temperature of the receiving water will also be controlled. * * *

9 VA. ADMIN. CODE § 25-260-20 (emphasis added).

When the Virginia Water Control Board enacted these water quality standards in 1981, its statement of basis and purpose made clear that the Board intended both narrative and numeric limits to be given force and effect:

Water quality standards consist of narrative statements that describe water quality requirements in general terms, and of numeric limits for specific physical, chemical, biological or radiological characteristics of water. These narrative statements and numeric limits describe water quality necessary to meet and maintain reasonable and beneficial uses such as swimming and other water based recreation, public water supply and the propagation and growth of aquatic life. Standards include general as well as specific descriptions, since not all requirements for water quality protection can be numerically defined.⁴

The Court of Appeals of Virginia has confirmed that the requirement to protect designated uses has independent force and effect in addition to the requirement to implement other water quality

⁴ Attachment C, Commonwealth of Virginia State Water Control Board, Water Quality Standards (eff. Dec. 12, 1981) (excerpt). The current water quality standards at 9 VA. ADMIN. CODE Ch. 260 are derived from this 1981 enactment.

standards. *See State Water Control Bd. v. Captain's Cove Util. Co., Inc.*, 2735-07-1, 2008 WL 2963851 (Va. Ct. App. Aug. 5, 2008) (reinstating water pollution control board's denial of discharge permit on basis that the discharge would impair recreational uses). The court noted that "9 VAC 25-260-20 is written in the disjunctive, prohibiting substances in state waters that *either* contravene established standards *or* interfere directly or indirectly with designated uses of such water." *Id.* (emphasis in original).

Virginia's narrative standards are specifically designed to address pollution like excessive algae that interferes with recreation and fishing. Virginia's waters are designated to support both recreation and game fish, among other things. 9 VA. ADMIN. CODE § 25-260-10.A. The narrative standards implementing these designated uses prohibit substances that "nourish undesirable or nuisance aquatic plant life" in amounts that "interfere directly or indirectly with designated uses." 9 VA. ADMIN. CODE § 25-260-20.A. Excessive algae is undoubtedly "nuisance aquatic plant life," and it significantly interferes with the designated use of recreation in a number of critical ways. *Id.* Virginia's narrative standards additionally control "substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits" in amounts that interfere with designated uses. *Id.* These narrative standards also apply to algae, as algae produces river discoloration and odors that interfere with recreation and game fishing. Accordingly, DEQ is required to assess whether the Shenandoah River meets these on-point narrative and designated use standards in the 2020 Integrated Report, 40 C.F.R. § 130.7(b)(3).

The available evidence demonstrates that Virginia's existing effluent limitations are insufficient to support the recreational designated use and ensure attainment of related water quality standards for the North Fork, South Fork, and main stem of the Shenandoah River. Our enclosed 2014 Technical Review sets forth extensive evidence of impairment including:

- Over one hundred and twenty citizen complaints identifying algae blooms by location and date, and describing impairment of recreational uses including primary contact recreation, boating, wading, fishing, and general aesthetic enjoyment;
- More than 1,000 photographs and videos, including information on location and date, showing excessive growth of algae;
- Data from a summer 2012 quantitative survey of stream transects for algae conditions in the Shenandoah River; and
- Satellite images in which spectral reflective signatures of several substances in the North Fork Shenandoah River are shown, indicating high concentrations of chlorophyll and phycocyanin (the pigment in blue-green algae or cyanobacteria).

In addition, the detailed complaints and images contained in Attachments A1-A8, as well as Attachment H, provide evidence that these conditions have persisted through today. Collectively, this evidence provides an overwhelming basis for finding that excess nutrients are present in quantities that, in combination with other environmental factors, cause frequent widespread algae blooms that interfere with attainment of Virginia's recreational designated use and related water quality standards.

B. EPA guidance on water quality assessment and listing decisions

In its 2014 guidance on integrated reporting, the U.S. Environmental Protection Agency (“EPA”) provided important information that is relevant to algae impairments.⁵ Among other things, EPA confirmed that visual assessments provide a valid basis for listing a waterbody as impaired:

A State can determine whether a waterbody is attaining its applicable narrative nutrient or other relevant narrative criteria and designated uses by using results of visual assessments. For example, field observations of excessive algal growth, macrophyte proliferation, adverse impacts on native vegetation (e.g., eelgrass), presence or duration of harmful algal blooms, unsightly green slimes or water column color, and/or objectionable odors may be a basis to include a waterbody on the State's Section 303(d) list for failing to meet one or more applicable narrative criteria and designated uses.

Therefore, EPA’s own guidance encourages states to use the very type of data submitted by Riverkeeper to make impairment decisions under narrative criteria. In addition, EPA affirmed that a state must list waters as impaired if their designated uses are threatened, even if the precise causes are not fully known:

[I]f a designated use is not supported and the segment currently fails to meet an applicable water quality standard or is "threatened," it must be included on the State's Section 303(d) list even if the specific pollutant causing the water quality standard exceedance is not known at the time.

EPA’s Guidance for 2016 integrated reporting points back to and extends this direction to Virginia and other states for the integrated report process now underway, stating in particular that, “[f]or States without nutrient-related assessment methodologies, there is still a requirement to assemble and evaluate all existing and readily available water quality-related data and information against all applicable numeric and narrative [water quality standards] to develop the CWA 303(d) list.”⁶ This guidance is consistent with EPA regulations requiring that Virginia “shall assemble and evaluate all existing and readily available water quality-related data and information to develop the [impaired waters] list...” 40 C.F.R. § 130.7(b)(5).

C. Relevant assessment approaches in other states

Relevant listing approaches in other states provide workable methods for assessing how excess algal growth prevents attainment of water quality standards. For example, Vermont considers water bodies to be impaired when “[a]n on-going record of public complaint

⁵ Attachment D, U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Memorandum, Information Concerning 2014 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions, *available at* https://www.epa.gov/sites/production/files/2015-10/documents/final_2014_memo_document.pdf.

⁶ Attachment E, EPA, Office of Wetlands, Oceans, and Watersheds, Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions at 10 (Aug. 13, 2015), *available at* https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf.

concerning the algal conditions in the water has been established.”⁷ Montana’s approach is similar: “Some circumstances related to excess nutrient pollution are severe enough that a rigorous data collection effort is not required. Photo documentation will suffice.”⁸ These approaches are appropriate for assessing nonattainment of Virginia’s water quality standards, since the designated use and the general criteria prohibiting “undesirable or nuisance” both implicate visual impacts of algae.

Furthermore, Virginia’s neighboring state, West Virginia, listed the Greenbrier River as impaired by algae after noticing excessive filamentous green algae was interfering with the river’s recreation use, in violation of the state’s narrative water quality standard on algae.⁹ Among other strategies to collect data on this problem, West Virginia conducted a survey of more than 1,000 residents’ opinions on the algae’s impairment with recreation.¹⁰ These examples further underscore the unreasonableness of DEQ’s failure to incorporate the Riverkeepers’ data into its 2020 Integrated Report decision.

II. DEQ’s Previous Rationale For Declining To Assess The Available Evidence Or To List These Streams Are Not Legally Or Technically Valid

DEQ rejected requests to list these waters as impaired in its 2010, 2012, 2014, 2016, and 2018 Integrated Reports, citing several technical and legal interpretations that lack merit. In September 2014, EPA approved Virginia’s 2012 Integrated Report, but expressly rejected several of DEQ’s reasons for deciding not assess the evidence and make a determination as to whether these waters are attaining or not attaining the applicable water quality standards.¹¹ After DEQ again declined to evaluate the evidence or make an impairment determination in its 2014 Integrated Report, EPA again approved the Integrated Report, while at the same time expressly rejecting the bulk of the reasons DEQ offered for taking no action.¹²

In its approval of the 2014 Integrated Report, EPA stated, among other things, that “the lack of a formalized methodology by itself is not a basis for a state to avoid evaluating data or

⁷ Attachment F, Vermont Surface Water Assessment and Listing Methodology at 23 (March 2016), *available at* http://dec.vermont.gov/sites/dec/files/wsm/mapp/docs/WSMD_assessmethod_2016.pdf (last visited Sept. 5, 2017) (in addition: “For cyanobacteria (blue-green algae), regular, reliable monitoring indicates that cyanobacteria routinely exceed guidelines established by the Vermont Department of Health for recreation. Invasive non-native aquatic species are not applicable in this category.”)

⁸ Attachment G, Montana Dept. of Environmental Quality, Assessment Methodology for Determining Wadeable Stream Impairment Due to Excess Nitrogen and Phosphorus Levels (Dec. 2011), *available at* https://www.deq.idaho.gov/media/937622-assessment_methodology_determining_wadeable_stream_impairment_excess_nitrogen_phosphorus_levels.pdf.

⁹ *See, e.g.*, Update on West Virginia’s Nutrient/Algae Monitoring and Assessment (Apr. 7, 2015), *available at* <https://dep.wv.gov/WWE/Programs/wqs/Documents/NutrientsAlgaeUpdate.pdf>; Algae Impairment Monitoring Update (Aug. 22, 2019), *available at* <https://dep.wv.gov/WWE/Programs/wqs/Documents/Public%20Meetings/August%202019/2019%20Algae%20Monitoring%20Update.pdf>.

¹⁰ *See id.*

¹¹ Letter and enclosures from Jon M. Capacasa, EPA Region 3 Water Protection Division, to Melanie Davenport, Div of Water Quality Programs at 5-7, VDEQ (Sept. 23, 2014).

¹² Letter and Enclosures from Jon Capacasa, EPA Region III Water Protection Div., to Jutta Schneider, Virginia Department of Environmental Quality (“DEQ”) Water Planning Div. at 6-8 (May 19, 2016).

information when developing its section 303(d) list.”¹³ EPA also stated that, because “the *Virginia 2014 Assessment Guidance* does not address the types of information submitted by [Shenandoah Riverkeeper] nor provide guidance as to how citizens can submit photographs, testimonials and other similar types of data,” the “lack of a State-approved [quality assurance project plan] alone should not be used to summarily reject data or assume that data is of low quality regardless of the actual quality controls that were employed.”¹⁴ As previously mentioned, the U.S. Court of Appeals for the D.C. Circuit recently approved of this reasoning, stating: “[t]o the extent that Virginia suggested that citizen data is *never* sufficient to support an impairment finding, EPA rejected that claim – and rightly so.” *See Potomac Riverkeeper et al. v. Wheeler*, No. 1:17-cv-01023 at 3 (D.C. Cir. Apr. 28, 2020) (per curiam) (emphasis in original).

EPA similarly approved the 2016 Integrated Report, reasoning that it was sufficient for DEQ to identify 25 non-contiguous river miles in Virginia’s “Category 3C,” despite the fact that 3C by definition only applies when the state decides *not* to make an impairment determination under CWA § 303(d).¹⁵ EPA also cited DEQ’s “commitments affirmed in an April 18, 2016 letter to EPA,” including the commitment to “[p]ropose numeric impairment threshold and assessment methods in VADEQ’s Draft 2018 Water Quality Assessment Guidance Manual”—commitments DEQ has still not fulfilled.

In its 2018 Integrated Report, DEQ still had not announced a numeric impairment threshold for algae as promised, and again refused to make an impairment decision for the Shenandoah River. DEQ did announce an approach to sampling and evaluating data for the Shenandoah River in that report. However, the approach does not provide an adequate picture of the nature and extent of algal blooms and other forms of nuisance aquatic plant life, nor does it give DEQ staff sufficient guidance on how to fully and properly assess the impacts of algae blooms on the designated uses and water quality standards for the Shenandoah River.¹⁶ Among other shortcomings, DEQ announced its use of Surber sampling to measure wet-wrung biomass of filamentous algae and benthic *chlorophyll a*. But those sampling methods are only compatible with capturing samples in depths less than one-half meter, an approach that overlooks algae growth in deeper water. DEQ’s preferred methodologies reflect a reactive, rather than proactive approach that employs river-user complaints only as a trigger for additional DEQ sampling, rather than as a basis for determining impairment. Its preferred monitoring method concentrates on areas that are easily visible and convenient to access from boat ramps, rather than the actual locations where algae blooms have been photographed and pinpointed in river-user algae complaints—locations that shift over time, unlike DEQ’s sampling locations. In addition, the approach announced in the 2018 report appears to give outsized weight to “good” years that are actually anomalous when viewed in context. Taking 2018 as an example, data collected by the USGS show that, with the exception of a few days in April and a few days in May, the entire watershed ran higher than the 88-year median for the entire algal growing season.¹⁷ For these

¹³ 2014 Integrated Report Approval at 8.

¹⁴ *Id.* at 8-9.

¹⁵ Letter and Enclosures from Catharine McManus, EPA Region III Water Protection Div., to Jutta Schneider, Virginia DEQ Water Planning Div. at 9-10 (March 6, 2018).

¹⁶ See Attachment I, Letter from Potomac Riverkeeper Network and Shenandoah Riverkeeper to Amanda Gray, Virginia DEQ, re. Comments on DEQ Draft Water Quality Assessment Guidance Manual (April 19, 2018).

¹⁷ Attachment J, U.S. Geological Service data from flow monitoring gauges for the Shenandoah River at Front Royal, VA, Strasburg, VA, and Millville, WV (retrieved on Feb. 20, 2019)

reasons, DEQ's sampling approach for evaluating algae impairment is designed to produce false negatives.

DEQ's justification for this approach – its desire for “a protocol that might be used on a consistent basis” – disregards the need for a protocol that is both consistent and effective at capturing algae outbreaks and their effects on recreational and aquatic life uses.¹⁸ DEQ's claim that “the high volume of algae in these shallow sections that would constitute a greater nuisance to recreational activities” lacks any factual basis, and is contrary to available information, including our public comments, showing that recreational uses occur in deeper waters. In addition, to the extent DEQ believes that photographic evidence is inadequate if it does not distinguish between types of algae or between algae and underwater grasses, that position is contrary to Virginia water quality standards. The applicable standards do not distinguish between different types of algae, or between excessive growth of algae and excessive growth of native grasses; all of this excessive growth stems from related root problems including over-nutritification, and all of it impedes the Shenandoah River's ability to support a balanced array of aquatic life and robust recreational use.

III. DEQ's Protracted Study Of Possible Monitoring Or Assessment Methods Does Not Free Virginia From Its Duty To Evaluate Available Evidence And Make A Determination Of Attainment Or Nonattainment

For the current Integrated Report, it appears that DEQ is, yet again, intent on refusing to assess the available evidence of impairment, and instead relying on its ongoing efforts to develop a listing threshold or assessment method (or both) as an excuse for refusing to assess the evidence that is *currently available* and that shows that the recreational use and related water quality standards in the North Fork, South Fork, and main stem of the Shenandoah River are not being met due to the presence and growth of excessive algae.¹⁹ Although the 2020 Integrated Report is the first one for which the 2017 and 2018 monitoring data falls within the regular assessment time frame (2013 – 2018), and DEQ stated in the 2018 Integrated Report that the 2017 and 2018 data was not being considered because it fell outside of the assessment time frame and it “may be considered for assessment in the 2020 IR,”²⁰ DEQ fails to even mention the possibility of conducting an impairment assessment based on this data in the 2020 report.²¹ Instead, DEQ simply repeats the same general and potential “assessment protocols” from the 2018 report, without finalizing the protocols, announcing any progress or updates, or applying them to the data in hand.²² Setting aside the thousands of photographs and hundreds of river user

¹⁸ DEQ, Draft 2018 Water Quality Assessment Guidance Public Comment – Response Document.

¹⁹ Draft 2016 Integrated Report, Chapter 4.3, River Basin Summary at 63-64; Shenandoah River Algae, Development of Field Monitoring Methods (Dec. 2, 2016), http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/ShenAlgae/VADEQ_Shenandoah_monitoring_public.pdf?ver=2016-12-02-134505-757 (last visited Sept. 5, 2017); Shenandoah River Monitoring Plan, Algal Field Methods Development (June 2016), available at http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/ShenAlgae/Shenandoah_Algal_Mon_Plan.pdf (last visited Sept. 5, 2017); VA DEQ Shenandoah Algae webpage on “Shenandoah Algae,” <http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/ShenandoahAlgae.aspx> (last visited Sept. 5, 2017).

²⁰ DEQ, Final 2018 Integrated Report at Ch. 4.3, at 72.

²¹ DEQ, Draft 2020 Integrated Report at Ch. 4.3, at 77-83.

²² *Id.*

complaints that DEQ has a duty to evaluate under the applicable water quality standards,²³ DEQ fails to even evaluate its own agency-collected data and make a determination whether that data indicates impairment under its narrative and designated use water quality standards. 40 C.F.R. § 130.7(b)(5). DEQ also again fails to announce a numeric threshold for algae as repeatedly promised, stating only vaguely that it would continue to work with EPA “on identifying an appropriate nuisance threshold.”²⁴ DEQ mentions no time frame for developing the impairment threshold, despite promises to identify one since its 2016 negotiations with EPA over the 2014 Integrated Report approval.

Moreover, DEQ acknowledges that 2019 was another year when it received numerous complaints from river users regarding excessive algae.²⁵ For the first time, DEQ responded to a small number of the complaints with location-specific sampling, taking limited samples at fifteen of the sites where complaints were made.²⁶ While we appreciate DEQ’s efforts to respond to complaints and conduct monitoring, these efforts are inadequate in scope and will ultimately be fruitless if DEQ continues to fail to apply any of its available data to its water quality standards. In addition, DEQ’s sampling protocols are deeply flawed, for the reasons explained above. DEQ is free to collect wet wrung biomass and chlorophyll-*a* data if it chooses, but this data is not probative of the recreational use DEQ must assess because it does not capture river users’ experiences. In contrast, the reams of data submitted by Riverkeeper since 2010 is highly relevant under Virginia’s specific standards. For example, the many user complaints of algae that has a sewage smell shows that the narrative standard that waters be free from substances that produce odors is not being met. 9 VA. ADMIN. CODE § 25-260-20.A. Similarly, the hundreds of photographs of unnaturally green-colored water demonstrates the narrative standard for color is being violated. *Id.* The fact that so many people are complaining they are physically unable to swim or successfully fish in the water due to the thick layer of slime is direct evidence of a violation of the recreational use standard and the narrative standard that waters be free from substances that “interfere directly or indirectly with designated uses.” *Id.* DEQ has all of the evidence of algae impairment it needs to make an assessment, and its repeated failure to do so is unlawful, as it frustrates and undermines the Virginia Water Control Board’s authority to establish the water quality standards and designated use that the Board established in 1981.

IV. Conclusion

As in prior years, we have provided material evidence demonstrating that the North Fork, South Fork, and mainstem of the Shenandoah River are impaired by excessive algal growth, and that consequently those waters are failing to support their designated use for recreation, notwithstanding DEQ’s ongoing efforts toward establishing a listing threshold or formal monitoring or assessment method. DEQ’s failure to act continues to greatly harm the public, which relies on the Shenandoah River for recreational activities like fishing, paddling, and swimming. We therefore call on DEQ to fulfill its duty under the Clean Water Act to now list the North Fork, South Fork, and mainstem of the Shenandoah River as impaired in the final 2020 Integrated Report.

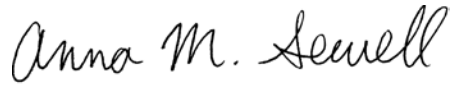
²³ See 40 C.F.R. § 130.7(b)(5); see *Potomac Riverkeeper et al. v. Wheeler*, No. 1:17-cv-01023 at 3 (D.C. Cir. Apr. 28, 2020) (per curiam).

²⁴ *Id.* at 83.

²⁵ *Id.* at 82.

²⁶ *Id.*

Sincerely,



Anna M. Sewell
Staff Attorney, Earthjustice



Phillip Musegaas
Vice President, Potomac Riverkeeper Network

CC: Catherine A. Libertz
Director, Water Division
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Via email to libertz.catherine@epa.gov

DEQ Response to Earthjustice and Potomac Riverkeeper Network

Thank you for providing comments on the 2020 IR and the characterization of the Shenandoah River. The quantitative monitoring and assessment protocols for evaluating algal impacts to the recreation use in five segments of the Shenandoah River are outlined in the 2020 Water Quality Assessment Guidance Manual. As you are aware, DEQ tested various monitoring methods during the 2016 season; however, the 2017 season was the first that focused on the newly proposed quantitative monitoring metrics. To collect a sufficient dataset for the proposed assessment process (e.g., a minimum of two years of data collected during the growing season), DEQ staff again conducted quantitative monitoring in the five Shenandoah River segments during the 2018 growing season, although very little algae was observed in high flow conditions. DEQ has yet to identify a meaningful nuisance threshold based on Virginia's work completed to date. In August 2020, DEQ will begin a process with EPA Region 3 and Region 3 states to work toward the completion of a river user survey on algae and recreation use.

A review of 2017 and 2018 benthic chlorophyll-a data collected at the priority monitoring sites suggests conflicting algae conditions for three sites--Timberville and Strasburg Park on the North Fork of the Shenandoah River and Bentonville on the South Fork of the Shenandoah River--for the two monitoring years (i.e., one year with persistent algae and one year with no algae). The remaining two sites—Elkton and Rileyville-- had little or no measurable algae during any of field seasons. For the 2020 IR, the five priority segments of the Shenandoah River remain listed as Category 3C. This determination was also based on the agency's review of photographic evidence previously submitted by the SRK, and indicates an observed effect but with insufficient data to determine whether the recreation use is supported or not.

During the 2019 season, DEQ Valley Regional staff conducted visual observations at five monitoring locations on the identified segments of concern. Bank observations of percent algal coverage began in May and continued until October. Observations greater than 10% algal coverage were first recorded in August for the two sites on the North Fork Shenandoah near Strasburg, September for Timberville and October for Bentonville on the South Fork Shenandoah. In 2019, the Rileyville site never recorded a visual observation over 10% and no sample was collected for laboratory analysis. At the three sites that recorded observations above 10%, DEQ staff continued to collect an algae sample on a monthly basis. A total of three algae samples were collected at Deer Rapids and Strasburg Park and two algae samples were collected at Timberville (all on the North Fork Shenandoah River). Only one sample was collected at the Bentonville site in 2019.

In addition to monthly monitoring, DEQ staff continued to respond to frequent (i.e., 53 complaints in 20 different assessment unit segments, which only included two of the original priority segments) nuisance algae complaints as time and resources allow. DEQ appreciates the efforts of the Potomac RiverKeeper Network (PRK) to photograph areas with filamentous algae. This information is very useful in prioritizing new sites for further monitoring to determine the potential for recreational impairments. Based on the information submitted by the PRK to date, DEQ intended to add three new sites to the 2020 filamentous algae monitoring plan. Due to severe resource limitations resulting from COVID-19, the monitoring will instead be considered for 2021, assuming sufficient resources.

Comments from Wild Virginia



July 9, 2020

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Sent via email

Re: Comments on Draft Integrated Report for 2020

Board of Directors:

Ms. Mueller:

Bette Dzamba
Sarah Fromme
Katie Keller
Leigh Kirchner
Elise Togbe
Jamie Trost
Ryan Wagener
Elizabeth Williams

I am submitting these comments on behalf of Wild Virginia and our members throughout the state and in other parts of the United States. We assert that one primary deficiency with the Integrated Report (IR) is the failure to properly acknowledge violations of the general or narrative criteria in the water quality standards regulation. We present new evidence and cite significant evidence that is already in the possession of the Department of Environmental Quality (DEQ) showing clear violations of those narrative criteria. DEQ must incorporate this evidence into the water quality assessment and, where violations have occurred, must add waters to the impaired waterbodies list.¹

Introduction

The objective of the Clean Water Act (CWA), the ultimate aim for all efforts under that statute, is:

To restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

33 U.S. Code § 1251(a) [CWA § 101(a)].

The Act further defines goals and policies, including that “wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983.” *Id.*

Water quality standards (WQS) are one of the foundational tools created by the CWA and federal regulations stipulate that WQS must be designed to serve the objective and goals.²

¹ We wish to endorse and adopt by reference comments submitted by Shenandoah Riverkeeper and Potomac Riverkeeper Network as those comments and the evidence they include are consistent with our assertions.

² See 40 C.F.R. § 131.2, “States adopt water quality standards to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (the Act). ‘Serve the purposes of the Act’ (as defined in sections 101(a)(2) and 303(c) of the Act) means that water quality standards should, wherever

States are responsible for “reviewing, establishing, and revising water quality standards,” 40 C.F.R. § 131.4, and those WQS may be more stringent than required by the federal regulation. *Id.* To be effective, WQS must define the conditions that are to be maintained in our waters to support healthy and sustainable aquatic systems and all designated and existing uses, as those uses are defined by law. These definitions must include narrative descriptions and, wherever possible and appropriate, numeric measures of physical, chemical, and biological characteristics that are necessary to maintain acceptable water quality to support all beneficial uses. Both types of criteria have equal legal weight and DEQ has an obligation to enforce both of them equally.

Virginia’s narrative water quality criteria, termed “general criteria” in the regulation, state as follows:

State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life.

Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances (including those which bioaccumulate); substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits; and substances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be controlled. Conditions within mixing zones established according to 9VAC25-260-20 B do not violate the provisions of this subsection.

9 VAC 25-260-20.

The IR claims that “Virginia bases its water quality assessment on the ability of the waters to support the associated designated uses” and that “[d]esignated use support is established on the waters meeting the criteria for each use as defined in the numeric and/or narrative water quality standards.” IR at 48 - 49. However, the report does not explain the components of these narrative criteria or describe how compliance with their mandates are assessed. Further, DEQ has made no effort to apply most of the parts of the narrative criteria, despite the public’s presentation of cases where activities allowed by the state was under its authority from both CWA section 402 (VPDES permitting) and section 401 (water quality certifications) and in earlier versions of this IR.

attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water and take into consideration their use and value of public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation.” (emphasis added).

In fact, in at least one case a member of the State Water Control Board (Board) noted that, according to the WQS regulations, the narrative criteria include a condition she paraphrased to indicate that “turbidity is not authorized.”³ That Board member’s assertion is consistent with the condition in the narrative criteria which states, in part, that “[s]pecific substances to be controlled include . . . substances that produce . . . turbidity.” 9 VAC 25-260-20. In response to the Board, a DEQ official stated that she did not know how a narrative criteria violation could be identified for turbidity, because Virginia has no numeric turbidity criteria.⁴ Of course, such a stance on the part of DEQ improperly negates the value of the Board’s duly-adopted narrative criteria, contrary to the clear wording of the regulation.

This approach also conflicts with the Board’s explicitly-stated intent when it adopted water quality standards in 1981. The statement of basis and purpose made clear that the Board intended both narrative and numeric limits to be given force and effect:

Water quality standards consist of narrative statements that describe water quality requirements in general terms, and of numeric limits for specific physical, chemical, biological or radiological characteristics of water. These narrative statements and numeric limits describe water quality necessary to meet and maintain reasonable and beneficial uses such as swimming and other water based recreation, public water supply and the propagation and growth of aquatic life. Standards include general as well as specific descriptions, since not all requirements for water quality protection can be numerically defined.⁵

DEQ has refused to apply several portions of the narrative criteria. Especially notable, is its failure to designate waters heavily degraded by the presence of “substances which nourish undesirable or nuisance aquatic plant life” such as is proven in Riverkeepers’ current comments and in its repeated submittals during the last ten years or more.⁶ However, in these comments we focus primarily on violations of the conditions related to turbidity and color.

Turbidity and Color

As quoted above, the addition of substances to a stream that produce color or turbidity is expressly prohibited. In addition, the General Criteria include prohibits “substances . . . which contravene established standards or *interfere directly or indirectly with designated uses.*” 9VAC 25-260-20.A. (emphasis added). Thus, it is not necessary that a use be eliminated by a change in water quality to violate the regulation, only that it be interfered with.

³ Statement by Nissa Dean, State Water Control Board meeting, August 21, 2018.

⁴ Statement by Melanie Davenport, State Water Control Board meeting, August 21, 2018.

⁵ Commonwealth of Virginia State Water Control Board, Water Quality Standards (eff. Dec. 12, 1981) (excerpt). The current water quality standards at 9 Va. Admin Code Ch. 260 are derived from this 1981 enactment.

⁶See also: DEQ Presentation, Shenandoah River Algae, Field Monitoring Methods, Data Summary and Current Status, April 10, 2019, https://vwmcvwrcc.wp.prod.es.cloud.vt.edu/wp-content/uploads/2019/04/Wyrick_2019-1.pdf (last accessed July 9, 2020).

Unusual colors and turbidity in a stream can affect habitats and species in ways that “interfere with” the designated use for support of aquatic life, defined in the regulation as “the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them; wildlife; and the production of edible and marketable natural resources, e.g., fish and shellfish.” 9VAC 25-260-10.A. Sediments or other solids that produce turbidity and/or color may greatly alter or destroy stream habitat, as demonstrated at sites described below that have been affected by discharges during Mountain Valley Pipeline (MVP) construction. The existence of color- or turbidity-producing substances may also block sunlight from penetrating the water column, inhibiting plant and animal growth, feeding, etc.

Another impact from color and turbidity is the interference with recreational uses of waterbodies. Such uses are to be protected under Virginia regulations at 9 VAC 25-260-10.A. The degree to which members of the public are deterred or prevented from using a waterbody due to color or turbidity will be determined by visual perception of the affected users and by the physical qualities of the polluted water. The fact that such visual impacts may “interfere with” uses cannot be seriously questioned. Use of a stream that, under natural conditions is clear and has low amounts of suspended matter, will certainly be impaired and the regulations require DEQ to acknowledge these kinds of problems by adding them to the CWA 303(d) priority waters list and then to take action through development and implementation of Total Maximum Daily Loads (TMDLs) to eliminate the impairments.

Streams Impaired by Color and/or Turbidity

A number of streams in areas that have been affected by discharges from MVP construction show clear violations of the narrative criteria. We present two different sets of data below: 1) DEQ field inspection reports to assess compliance with the Virginia Water Protection (VWP) regulations and 2) information provided by citizens about impacts in three specific areas along the MVP route.

In addition, we provide proof of impairment of the James River, resulting from discharges by a paper manufacturing plant.

A. Stream Impairments Due to Mountain Valley Pipeline

- 1) DEQ Inspection reports – DEQ has made a large body of inspection reports related to the MVP available on its web site on a page entitled “Multi-faceted Inspection for Oversight of Pipeline Projects.”⁷ Eight of those inspection reports are entitled “VWP Field Inspection Report.” Each of these inspections revealed instances when heavy discharges of sediment entered waterbodies due to releases from the MVP construction right of way. While we only address these VWP inspection reports here, we note that other reports in the collection on DEQ’s site describe serious discharges of sediment causing many other cases where streams were inundated with sediments resulting in heavy turbidity and color in the streams.

⁷ Accessible at <https://www.deq.virginia.gov/Programs/Water/ProtectionRequirementsforPipelines/Multi-facetedInspectionforOversightofPipelineProjects.aspx>.

Given that this information is within DEQ's control, we do not believe it is incumbent upon us to provide the reports or to describe each in detail. However, what is clear from a review of the reports is that in each of these eight cases, and in many others described as Field Inspection reports or Complaint Investigation reports, the narrative criteria were violated. The most extreme examples include:

- A site identified as "Bacchus Road; 37°15'30.5"N, 80°17'46.8"W, Stream Crossing SMM-15." The inspection of an unnamed tributary to Flatwood Branch, in Montgomery County, was made in June of 2018. Inspectors described a 3,600 foot segment of the stream in which sediment deposits ranged from 1 inch to 7 inches deep throughout the length of the section. The photograph in Figure 1. depicts a small portion of this stream. We can conceive of no clearer example of a discharge that resulted in turbidity and color in the waterbody and which clearly would interfere with aquatic life and recreational uses. Apparently, MVP personnel were ordered to remove these sediments using hand tools and buckets. However, this represents a serious impairment of the stream.
- At a site identified as "Catawba Road; 37°15'53.6"N, 80°18'30.8"W, Stream Crossing #39 and #40," inspectors found a total of 2,200 linear feet of channel within two separate streams to be coated in sediment ranging from 1 to 5 inches in depth. The photographs of these two tributaries to the North Fork Roanoke River, show water columns where the flows are brownish to orange in color, in addition to the mud-covered stream bottoms. These streams must be designated impaired and follow-up inspections must determine whether or to what extent long-term degradation was caused.

Though the specific discharges that produced these and the other stream impairments shown in the eight VWP inspection reports were of relatively short duration, the impacts of those pollution events could be long-lasting. First, of the large volumes of sediment released to these streams, even if some is removed from the beds of the creeks in the immediate vicinity of the discharge, much of it will travel downstream and have lasting impacts.

Second, the very action of digging within the streams cannot prevent the damage already done to the habitats and, in fact, may well worsen the damage. Third, additional sediment-laden discharges from the work sites will have cumulative effects in combination with these major events. Finally, the interference with designated uses in these streams occurred from the day the pollution events occurred and even if that interference lasted no longer than one week, or even one day, the WQS were violated. Virginia's WQS regulation does not allow for uses to be eliminated or severely damaged for any period of time.

We also note that, while the discharges from MVP in these instances were apparent violations of the water quality certification issued for the project, such a showing of noncompliance is not required for the occurrence to be a violation of WQS. Even if

discharges of sediment or sediment-laden water are held not to violate requirements under a 401 certification or a discharge permit, the creation of turbid or colored conditions in the waterbody are violations of the narrative criteria. Acknowledging this fact is especially important, because these occurrences must be addressed and prevented in future regulatory actions.

- 2) Citizen Documentation of Narrative Criteria Violations – Land disturbance at a site along Teels Creek in Franklin County has caused repeated and frequent discharges of highly turbid and colored water, thereby violating these conditions of the narrative criteria. The site in question is at latitude 37 deg. 5' 18" N and longitude 79 deg. 57' 2" W (see aerial photo of location in relation to pipeline on Figure 3). The MVP right of way crosses Teels Creek both upstream and downstream from this site and runs parallel to the stream for well over 2 miles. Discharges of turbid and colored water have been documented at numerous points along Teels Creek but, for our purposes, it is sufficient to show the impact to the stream at this one location.

Soon after clearing and graded began along this section of the MVP right of way, flows of muddy water began to undermine silt fence bordering Teels Creek and discharges of highly colored and turbid water were discharged to the stream. MVP personnel continually worked on and added control measures but, through time the stream bank along this segment collapsed, dumping even more sediment into the stream. Figure 4 shows the discharge and collapsing bank on May 27, 2018. Nearly a month later, the pollution controls continued to fail and sediment-laden and highly colored water continued to discharge into the stream, as shown in Figure 5.

In the many months after these discharges began, up through early 2020, the area on the right of way adjacent to Teels Creek at the is location was almost continually covered with an impoundment of water that frequently discharge turbid and colored water to the stream.

The prohibition against contributions of color and turbidity to state water in the narrative criteria has been violated on hundreds of days during the last two years. The destruction of the stream bank will continue to contribute sediments to the stream unless and until the bank is reconstructed. The color and turbidity caused by MVP violate the criteria *per se* but also create conditions in the waterbody that interfere with aquatic life uses, through destruction of habitat, and with recreational uses. The landowners at this site and others downstream have valued this stream for its aesthetic qualities, a component of the recreation designated use, and have a right to enjoy that use without interference from MVP's discharges.

DEQ has a duty to report this violation in the IR and to list the associated segment of Teels Creek as impaired. At the same time, DEQ must take the initiative and identify other streams and wetlands where turbidity and color have been impaired, as documented through public reports to the Department. The complaint logs and inspection reports in DEQ's possession are replete with such violations. Unfortunately, DEQ has determined that many of the discharges that led to high turbidity and color in these streams did not constitute violations of the water quality certification issued for MVP. However, as stated

above, the status of those impacts as regards compliance with the requirements imposed on MVP is irrelevant to the question as to whether WQS are violated. Clearly, even when all erosion and sediment control plans are followed and 401 conditions are met, nearby waters have been degraded and impaired in dozens, if not hundreds, of segments.

It is instructive to review the ways other regulators address turbidity in streams, to gauge the seriousness of the kinds of problems we identify herein. The U.S. Environmental Protection Agency has published recommended criteria, based on thousands of samples in a wide variety of streams in each ecoregion in the country. The suggested criterion for the region where the streams examined here is at a level of 2.3 Nephelometric Turbidity Units (FTU).⁸ This number is believed to represent conditions that would be found in high quality or relatively unimpacted streams and, therefore, should be protective of aquatic ecosystems.

The array of water samples shown in Figure 6, shows the appearance of a range of turbidity levels in bottles. While these samples cannot be directly related to the appearance of water instream at the same turbidity levels, they are instructive. The level of turbidity in the discharge and in Teels Creek shown in Figure 5 would appear to be well higher than the 500 NTU sample in Figure 6, and may well be higher than the 2,000 NTU sample. At the very least, the turbidity in Teels Creek, and in the other streams discussed in these comments must be hundreds of times greater than EPA's recommended criterion.

B. Stream Impairment Caused by Paper Mill Waste

In addition to the water quality impairments described above for streams in the MVP construction area, we cite one example of a violation of narrative criteria for color caused by a discharge authorized by a VPDES permit. The facility is called Greif Packaging Paperboard Mill and is covered by permit number VA0006408. As can be seen in the Figure 7, even in the satellite image from Google Earth, the intensity of color in the James River is extreme and the contrast with the upstream waters is stark. This photo is taken within the period covered by this IR (2013 – 2018) but similar impacts on the stream have been present for decades. Similar views can be seen in Google Earth images as early as 2002 and I personally have seen these types of colors in the river at this location from the 1980s up through at least 2010.

There could be no clearer instance of a violation of the narrative criteria's prohibition on the discharge of substances that produce color. Again, even if this discharge is allowed by the current VPDES permit, the WQS violation is clear. The two are not mutually exclusive. DEQ must list this segment of the James River as impaired for color and a TMDL must be developed. This must then be used to revise the discharge permit to ensure future WQS violations are prevented.

Conclusion

The kinds of water quality observations contained in these comments differ from the kind of quantitative measures DEQ generally relies upon. Where numeric criteria exist and suitable data has been collected, these methods will be preferable in most cases. However, the very nature of narrative criteria dictate that DEQ must not exclude these types of evidence but give

⁸ U.S. EPA, *Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Nutrient Ecoregion XI*, December 2000, p. vi.

Sandra Mueller, Virginia DEQ
July 9, 2020

these materials the weight they deserve. Rather, DEQ has a duty to seek out this kind of evidence and use it in preparation of the final IR.

Sincerely,

/s/ David Sligh

David Sligh
Conservation Director

Att: "Figures with Wild Va. Comments on 2020 draft IR"

Figures to accompany Wild Virginia Comments on draft IR report for 2020



Figure 1 – Unnamed Tributary to Flatwoods Branch, from DEQ inspection report



Figure 2 – Unnamed Tributary to North Fork Roanoke River, from DEQ inspection report



Figure 3 – Site of violations on Teels Creek in relation to MVP right of way



Figure 4 – Teels Creek site, May 27, 2018



Figure 5 – Teels Creek site, June 23, 2018

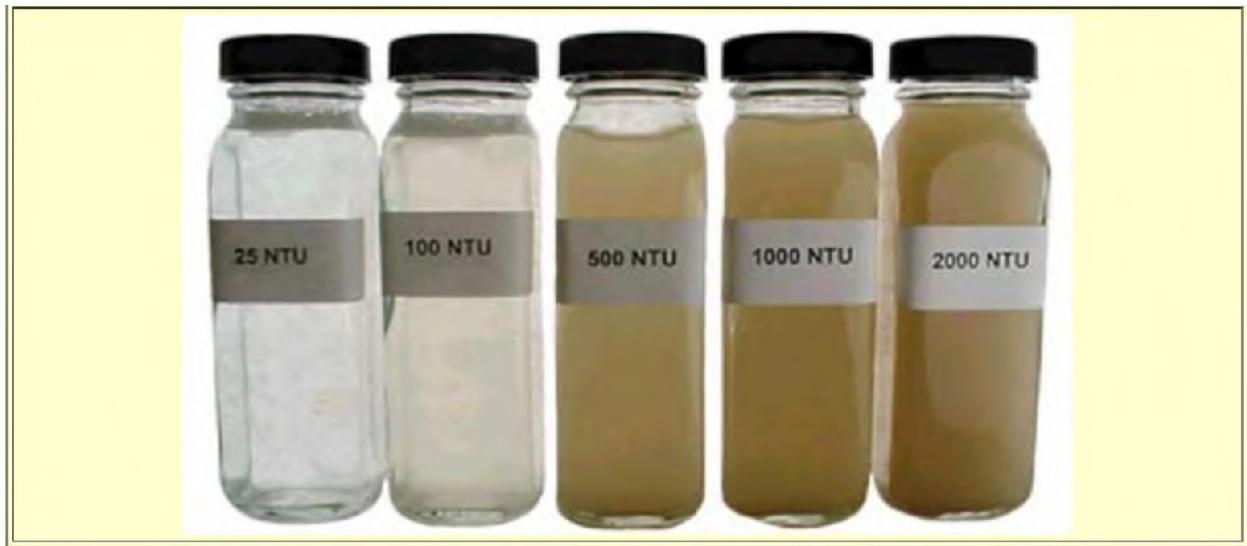


Figure 6 – Example, appearance of water samples at different turbidity levels



Figure 7 – color in James River from paper mill discharge, 9/15/15s with

DEQ Response to Wild Virginia

A. Stream Impairments Due to Mountain Valley Pipeline (MVP)

DEQ received and reviewed the information submitted; however, the agency does not have evidence that the temporary impacts noted, mitigated, and removed, which are consistent with other construction sites or land-disturbing activities, caused an exceedance of Virginia's narrative water quality criteria or resulted in water quality impairments or harm to water quality or aquatic life.

Virginia's narrative water quality criteria, termed "general criteria" in the regulation, state as follows:

State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life.

Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances (including those which bioaccumulate); substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits; and substances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be controlled. Conditions within mixing zones established according to 9VAC25-260-20 B do not violate the provisions of this subsection.

The use of the term "controlled" in this context connotes actions or measures to limit or minimize the introduction of the example pollutants in accordance with specific implementation procedures, not their complete elimination or removal. To "control" erosion and sediment releases from its construction activities, per the narrative criteria, MVP has DEQ-approved annual standards and specifications, DEQ-approved erosion and sediment control (ESC) plans, and DEQ-approved stormwater management plans, which were implemented in the field prior to beginning construction. MVP has hundreds of ESC measures and best management practices in place along all stretches of construction, to include access roads and laydown areas, for the purposes of controlling sediment-laden runoff from impacting streams and wetlands. DEQ requires MVP to install, monitor, and maintain miles of temporary ESC measures that will remain in place until the completion of construction and the permanent stabilization of the entire right of way, access roads and laydown areas.

In accordance with Part II.G of the Construction Stormwater General Permit, 9VAC25-880-70, construction activities that discharge to waters identified as impaired in the 2016 § 305(b)/303(d) Water Quality Assessment Integrated Report or with an applicable TMDL wasteload allocation established are subject to a more frequent operator inspection schedule. Although not subject to the Construction Stormwater General Permit, MVP's DEQ-approved annual standards and specifications are as stringent as the requirements in Part II.G of the general permit where applicable. Additionally, DEQ's inspection protocols have been as stringent as those specified in

Part II.G of the general permit. DEQ monitors MVP's installation and maintenance of ESC measures by assigning two inspectors per spread, eight to ten hours per day, five to six days per week inspecting MVP's ESC measures, investigating all complaints from the public, producing hundreds of written reports, and assigning and tracking, through to completion, of all requested corrective actions documented in the field.

While best management practices (BMPs) installed as ESC measures have proven effective at reducing or preventing the discharge of sediment and other pollutants found on construction sites, violations of the conditions specified in the DEQ-approved annual standards and specifications can occur and are addressed and mitigated accordingly.

In 2018, between late May and the early October, Virginia was impacted by three named storms (Alberto, Florence, and Michael) that contributed to cresting of streams and rivers and massive flooding in the area that caused naturally occurring bank erosion and observations of high and sustained turbidity. Moreover, many areas near the MVP construction in Virginia experienced frequent periods of high intensity rainfall starting in the spring of 2018 through the summer and into the fall of the same year. All of the photographs provided with Wild Virginia's comments--which show sediment deposition--were taken during this period. During this period, DEQ conducted eight Virginia Water Protection inspections documenting sediment impacts to streams and wetlands. DEQ and the Office of the Attorney General addressed all eight VWP violations formally¹ in 2018. DEQ immediately instructed MVP to remove sediment from impacted streams and wetlands within MVP's Right of Way (ROW) within 24 hours of detection; and as soon as possible, where MVP needed landowner permission to remove sediment deposited outside of the construction ROW. Afterward, DEQ's wetland specialist re-inspected all areas to ensure the removal of sedimentation had been acceptably accomplished.

The Final 2020 Water Quality Assessment Guidance, Part IV, describes the general rules of water quality assessment.

305(b)/303(d) assessments seek to characterize surface waters under typical, ambient conditions. For this reason, water quality assessments are based on data that are representative of normal conditions. The assessment begins by analyzing all QA/QC-approved data from DEQ ambient water quality monitoring stations, biological, sediment and fish tissue monitoring, special studies and/or other non-DEQ water quality data collected during the six-year assessment period. This interval of time works in concert with the ambient rotating watershed monitoring program. Assessment data are compared to both numeric and narrative criteria established for Virginia's designated uses and promulgated in its water quality standards (WQS; 9 VAC 25-260). Listing decisions will not be based on datasets that are solely targeted or biased^[1].

^[1] DEQ may assess targeted datasets collected to investigate probable stressors for existing benthic impairments (i.e. toxics). This may lead to the identification of other assessment units with impaired aquatic life uses. These impairments may be addressed under the TMDL(s) developed to address the initial benthic impairment.

¹ July 9, 2018, Notice of Violation & December 7, 2018, Complaint filed in the Circuit Court of Henrico

Teels Creek in Franklin County (at the point in question) is currently listed on Virginia's 303(d) list as impaired for the Aquatic Life Use due to benthic macroinvertebrate bioassessments and the resulting Virginia Stream Condition Index score indicating negative impacts to the biota. The segment was first listed in 2002. A TMDL to identify and limit potential stressors is due to be completed. Available data will be considered during the stressor identification process. The other two sites mentioned in the comment (*i.e.*, unnamed tributaries to Flatwoods Branch and the North Fork of the Roanoke River) are headwater streams and not prioritized for ambient monitoring in DEQ's current monitoring strategy. DEQ stations downstream on the North Fork of the Roanoke River indicate the waters are fully supporting for Aquatic Life Use.

B. Stream Impairment Caused by Paper Mill Waste

VPDES Individual Permitted facilities are evaluated and listed as Category 4B or 5E based on water quality-based effluent limits or their basis for limits as documented in the permit (per Final 2020 Water Quality Assessment Guidance, Part VII.). Although generally these limits are tied to numeric criteria, there are currently facility outfalls listed that have limits based on protection of the general standard (Acute Whole Effluent Testing) or best professional judgement (e.g., Total Suspended Solids).

VPDES Permit VA0006408 Greif Packaging Paperboard Mill has had color limits on their main process wastewater outfall since 1985. The limits are based on a study conducted by Virginia Tech to evaluate the effects of the treated effluent on the James River. The results of the study do not demonstrate that the color in the effluent is adversely affecting certain aquatic organisms in the James River. The facility has shown full compliance with the color limits during the 2020 IR data window, therefore it is not listed as Category 4B or 5E.

General Public Comments Received

Public comments were received via email from fifteen different individuals during the 2020 IR public comment period. The comments were general in nature regarding Virginia's water quality monitoring and assessment process.

DEQ Response

The Virginia Department of Environmental Quality (DEQ) is responsible for protecting and enhancing Virginia's environment and for promoting the health and well-being of the citizens of the commonwealth. DEQ administers state and federal environmental laws and regulations pertinent to air and water quality, water supply, and land protection and revitalization. DEQ's two Water Divisions (Water Permitting and Water Planning) are responsible for carrying out the mandates of the State Water Control Law, as well as meeting Virginia's federal obligations under the Clean Water Act. DEQ administers state laws and regulations to improve and protect Virginia's streams, rivers, bays, wetlands and ground water for aquatic life, human health and other beneficial water uses. Water monitoring programs, the water quality standards program, water quality assessments, Total Maximum Daily Load (TMDL) plans and permitting under the Virginia Pollution Discharge Elimination System (VPDES), the Virginia Water Protection (VWP) and the Virginia Pollution Abatement (VPA) programs are vital instruments DEQ uses to carry out its duties. Please visit DEQ's Water Programs [website](#) to learn more about these programs and others.

Under the Clean Water Act, EPA requires that each state develop a program to monitor the quality of its surface and ground waters and prepare a report every two years describing the status of its water quality. Each state identifies waters of concern as having observed effects and schedules additional monitoring, if appropriate, to determine if designated uses are being met. EPA issues guidelines for states to use during the reporting cycle for national consistency purposes. States are encouraged to use these guidelines to prepare these water quality reports for EPA. EPA compiles the data from the state reports, summarizes them, and transmits the summaries to Congress, including an analysis of water quality nationwide. Referring to the applicable Clean Water Act sections, this 305(b)/303(d) process is the principal means by which the EPA, Congress, and the public evaluate current water quality, the progress made maintaining and restoring water quality, and the extent of remaining work to be done. Many states, including Virginia, rely on the 305(b)/303(d) process for information needed to conduct water quality planning. The 305(b)/303(d) process is an integral part of Virginia's water quality management program, for which requirements are set forth in federal regulations (40 CFR 130). Additional information on the objectives and federal requirements on the Integrated Report can be found in Chapter 1 of the 2020 Final Integrated Report posted on the DEQ Website.

There are several ways the public can assist DEQ with protecting water resources. Each year, DEQ seeks input from the citizens of the Commonwealth to identify waterbodies which could benefit from monitoring by agency staff. Nominations can be for any waterbody located in the Commonwealth and are submitted from January 1 to April 30. Once nominations are received, the agency will review the request based on staff and resource availability, if recent monitoring has occurred in the waterbody, and if the request falls under the agency's water quality

monitoring program. If the agency is able to honor the nomination, follow up sampling will occur in the following calendar year. Please visit the Follow-Up Monitoring [website](#) to access the nomination form.

In addition, the DEQ Pollution Response Program (PReP), provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PReP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PReP Program. The public can report pollution incidents through the DEQ [website](#).